(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 10 February 2005 (10.02.2005)

PCT

(10) International Publication Number WO 2005/013650 A3

(51) International Patent Classification⁷: G01R 31/02

(21) International Application Number:

PCT/US2004/023645

(22) International Filing Date: 22 July 2004 (22.07.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/490,318 25 July 2003 (25.07.2003) US 10/774,088 6 February 2004 (06.02.2004) US

(71) Applicant (for all designated States except US): POWER MEASUREMENT LTD. [CA/CA]; 2195 Keating Cross Road, Saanichton, British Columbia V8M 2A5 (CA).

(72) Inventors; and

(75) Inventors/Applicants (for US only): GUNN, Colin, N. [CA/CA]; 2771 Vantilburg Crescent, Victoria, British Columbia V9B 3K5 (CA). LIGHTBODY, Simon, H. [CA/CA]; 6509 Central Saanich Rd., Victoria, British Columbia V8Z 5T9 (CA). FORTH, Bradford, J. [US/CA];

2088 Loren Terrace, Victoria, British Colombia V8S 2H9 (CA). **HANCOCK, Martin, A.** [AU/CA]; 1241 Pearce Crescent, Victoria, British Columbia V8X 3S8 (CA). **HYATT, Geoffrey, T.** [CA/CA]; 2560 Lincoln Road, Victoria, British Columbia V8R 6R6 (CA).

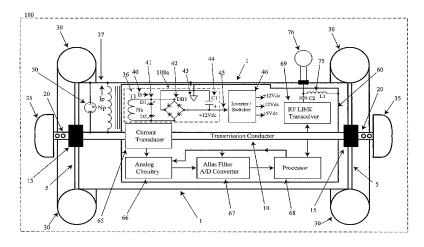
(74) Agent: BURNS, Israelsen, R.; Workman Nydegger, 1000 Eagle Gate Tower, 60 East South Temple, Salt Lake City, UT 84111 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,

[Continued on next page]

(54) Title: BODY CAPACITANCE ELECTRIC BODY CAPACITANCE ELECTRIC FIELD POWERED DEVICE FOR HGH VOLTAGE LINES



(57) Abstract: Devices that couple to high voltage transmission lines obtain power themselves using the body capacitance of an element of the devices. The devices generate a comparatively lower voltage from the current flowing between the high voltage line and the element of the device that generates the body capacitance. The devices can be used to operate sensors that monitor the transmission lines or parameters of the power distribution system, such as current, line temperature, vibration, and the like. The devices can also be used as indicators, such as aircraft warning lights, information signs, etc. In addition, the devices can operate as RF transmission/reception or repeater devices, radar devices, mesh networking nodes, video/audio surveillance, sound emitting devices for scaring animals, drones that traverse the power line, etc. Because the devices operate in response to line voltage rather than current, the devices are reliable even in low current conditions.





WO 2005/013650 A3



FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ,

BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

Published:

with international search report

(88) Date of publication of the international search report: 24 November 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.